

Figure e-1: PRISMA flow diagram describing identification, screening, eligibility, and inclusion of studies in the systematic review

Figure e-2: Association between diabetes mellitus and the occurrence of ICH in 16 case-control studies that attempted to control for age and sex.

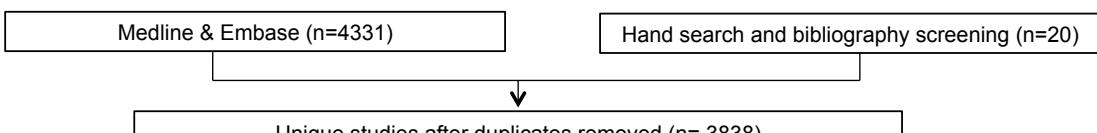
Figure e-3: Association between diabetes mellitus and the occurrence of ICH in 19 case-control studies, stratified by ICH type and ordered by mid-year of each study sample (if known)

Appendix e-1: Electronic search strategies

e-References

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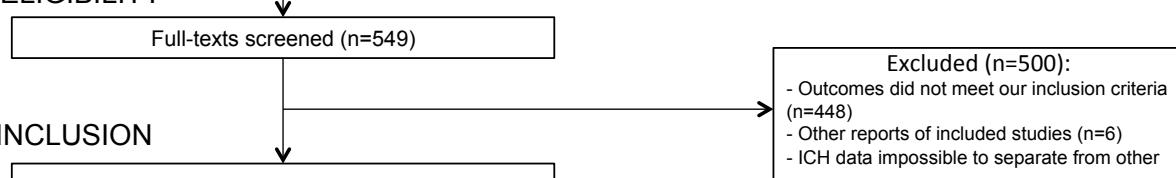
IDENTIFICATION



SCREENING



ELIGIBILITY



INCLUSION

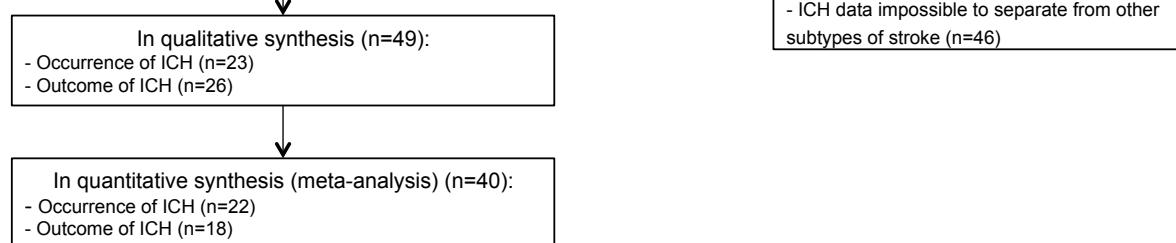


Figure e-2: Association between diabetes mellitus (DM) and the occurrence of ICH in 16 case-control studies that attempted to control for age and sex and ordered by mid-year of each study sample (if known)

Year: Study mid-year

Events: Number of people with diabetes mellitus

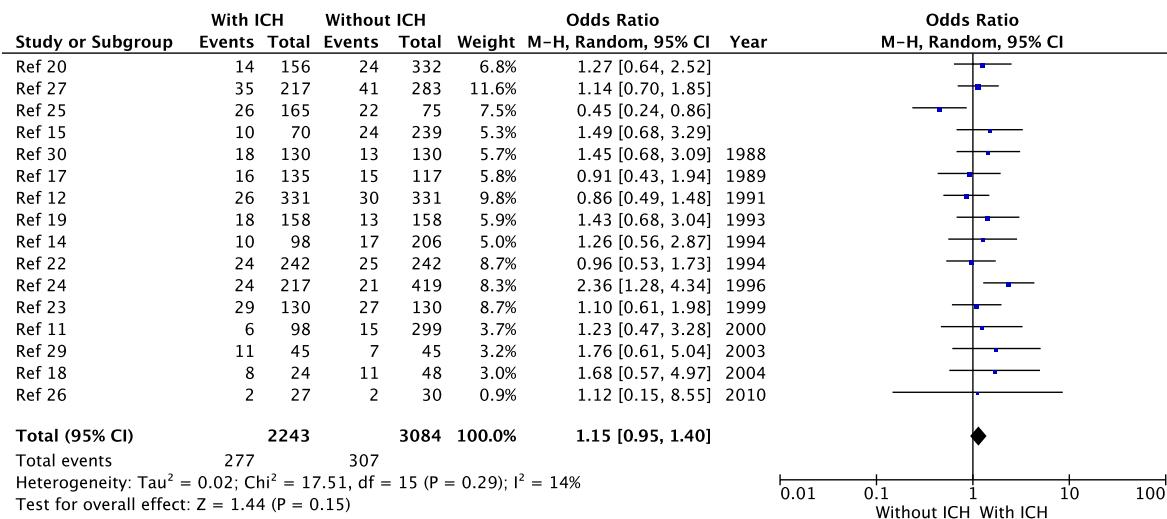
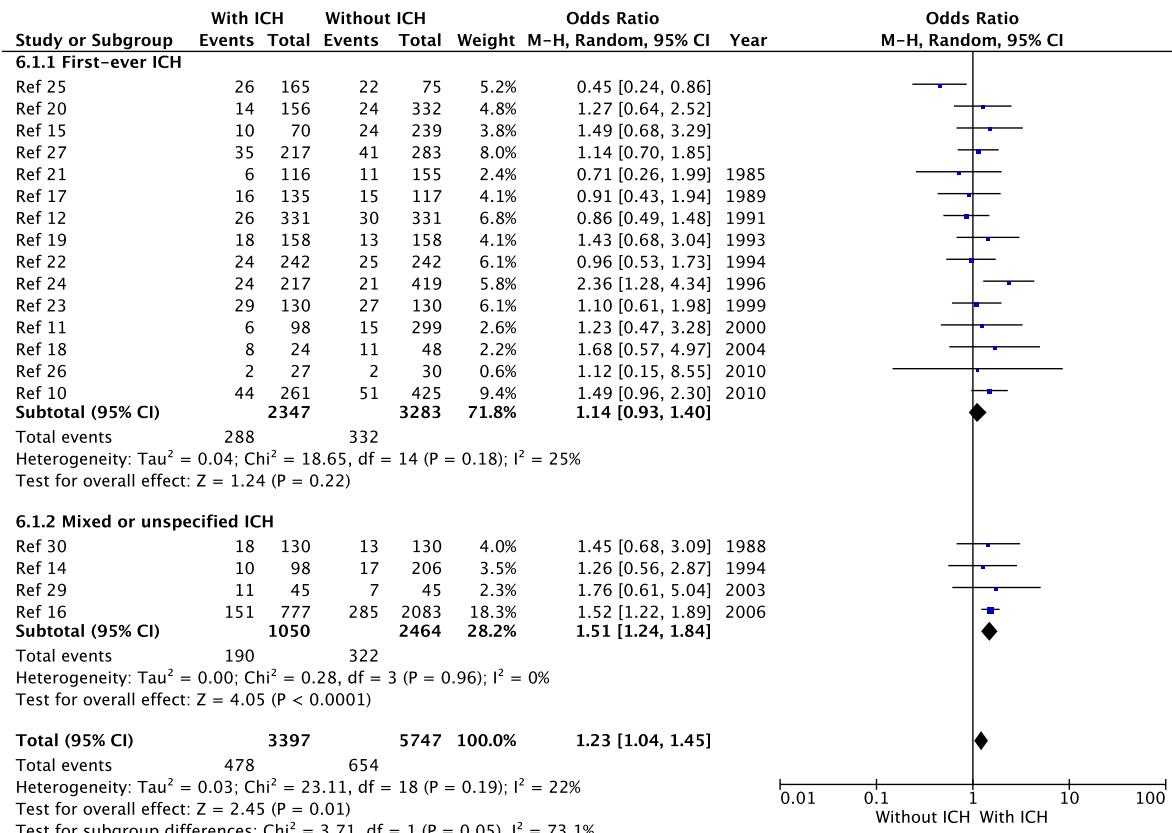


Figure e-3: Association between diabetes mellitus (DM) and the occurrence of ICH in 19 case-control studies, stratified by ICH type and ordered by mid-year of each study sample (if known)

Year: Study mid-year

Events: Number of people with diabetes mellitus



Appendix e-1: Electronic search strategies**OVID (Medline)**

1. Intracranial Hemorrhages/
2. cerebral hemorrhage/ or basal ganglia hemorrhage/ or intracranial hemorrhage, hypertensive/
3. brain\$.mp.
4. cerebr\$.mp.
5. cerebell\$.mp.
6. intracerebral.mp.
7. intracran\$.mp.
8. parenchymal.mp.
9. intraventricular.mp.
10. infratentorial.mp.
11. supratentorial.mp.
12. basal gangli\$.mp.
13. putaminal.mp.
14. putamen.mp. or Putamen/
15. Cranial Fossa, Posterior/ or posterior fossa.mp.
16. bleed\$.mp.
17. exp Diabetes Mellitus/
18. diabet\$.mp.
19. exp Insulin/
20. insulin\$.mp.
21. non insulin\$.mp.
22. insulin\$ depend\$.mp.
23. non insulin\$ depend\$.mp.
24. risk factor\$.mp. or Risk Factors/
25. mortality/ or "cause of death"/ or fatal outcome/ or hospital mortality/ or survival rate/
26. h?emorrhage\$.mp.
27. h?ematoma\$.mp.
28. prognosis/ or disease-free survival/ or treatment outcome/
29. prognos\$.mp.
30. exp case-control studies/ or exp cohort studies/

31. case control stud\$.mp.
32. cohort\$.mp.
33. 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15
34. 16 or 26 or 27
35. 33 and 34
36. 1 or 2 or 35
37. 17 or 18 or 19 or 20 or 21 or 22 or 23
38. 24 or 25 or 28 or 29 or 30 or 31 or 32
39. 36 and 37 and 38
40. limit 39 to humans
41. limit 40 to yr="1980 -Current"

OVID (Embase)

1. putaminal hemorrhage/ or basal ganglion hemorrhage/
2. brain hemorrhage/ or brain ventricle hemorrhage/ or cerebellum hemorrhage/
3. brain\$.mp.
4. cerebr\$.mp.
5. cerebell\$.mp.
6. intracerebral.mp.
7. intracran\$.mp.
8. parenchymal.mp.
9. intraventricular.mp.
10. posterior fossa/ or infratentorial.mp.
11. supratentorial.mp.
12. basal gangli\$.mp.
13. bleeding/
14. risk factor/
15. outcome variable/ or outcome.mp.
16. haemorrhage\$.mp.
17. hemorrhage\$.mp.
18. hematoma\$.mp.
19. haematoma\$.mp.
20. mortality/
21. prognosis.mp.

- 22. case control study/
- 23. retrospective studies.mp. or retrospective study/
- 24. cohort analysis/
- 25. 22 or 23 or 24
- 26. 14 or 15 or 20 or 21
- 27. 1 or 2
- 28. putaminal.mp. or putamen/
- 29. 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 28
- 30. 13 or 16 or 17 or 18 or 19
- 31. 29 and 30
- 32. 27 or 31
- 33. diabetes mellitus/ or insulin dependent diabetes mellitus/ or non insulin dependent diabetes mellitus/
- 34. 25 or 26
- 35. diabet\$.mp.
- 36. 33 or 35
- 37. 32 and 34 and 36
- 38. limit 37 to human
- 39. limit 38 to yr="1980 -Current"
- 40. limit 39 to conference abstract
- 41. 39 not 40

e-References

- e1. Appelboom G, Piazza MA, Hwang BY, Carpenter A, Bruce SS, Mayer S, et al. Severity of intraventricular extension correlates with level of admission glucose after intracerebral hemorrhage. *Stroke*. 2011;42:1883-1888.
- e2. Arboix A, Massons J, Garcia-Eroles L, Oliveres M, Targa C. Diabetes is an independent risk factor for in-hospital mortality from acute spontaneous intracerebral hemorrhage. *Diabetes Care*. 2000;23:1527-1532.
- e3. Boru UT, Gul L, Tasdemir M. A hospital-based study on long-term mortality and predictive factors after spontaneous intracerebral hemorrhage from Turkey. *Neurology Asia*. 2009;14:11-14.
- e4. Chen HS, Hsieh CF, Chau TT, Yang CD, Chen YW. Risk factors of in-hospital mortality of intracerebral hemorrhage and comparison of ICH scores in a Taiwanese population. *European Neurology*. 2011;66:59-63.
- e5. Chiu CC, Li YN, Lin LJ, Hsiao CT, Hsiao KY, Chen IC. Serum D-dimer as a predictor of mortality in patients with acute spontaneous intracerebral hemorrhage. *Journal of Clinical Neuroscience*. 2012;19:810-813.
- e6. Edwards DF, Hollingsworth H, Zazulia AR, Diringer MN. Artificial neural networks improve the prediction of mortality in intracerebral hemorrhage. *Neurology*. 1999;53:351-357.
- e7. Fogelholm R, Murros K, Rissanen A, Avikainen S. Admission blood glucose and short term survival in primary intracerebral haemorrhage: a population based study. *Journal of Neurology, Neurosurgery & Psychiatry*. 2005;76:349-353.
- e8. Godoy DA, Pinero GR, Svampa S, Papa F, Di Napoli M. Hyperglycemia and short-term outcome in patients with spontaneous intracerebral hemorrhage. *Neurocritical Care*. 2008;9:217-229.
- e9. Kim KD, Chang CH, Choi BY, Jung YJ. Mortality and real cause of death from the nonlesional intracerebral hemorrhage. *Journal of Korean Neurosurgical Society*. 2014;55:1-4.
- e10. Lee SH, Kim BJ, Ryu W-S, Kim CK, Kim N, Park B-J, et al. White matter lesions and poor outcome after intracerebral hemorrhage. *Neurology*. 2010;74:1502-1510.
- e11. Mansouri B, Heidari K, Asadollahi S, Nazari M, Assarzadegan F, Amini A. Mortality and functional disability after spontaneous intracranial hemorrhage: the predictive impact of overall admission factors. *Neurological Sciences*. 2013;34:1933-1939.
- e12. Roquer J, Rodriguez Campello A, Gomis M, Ois A, Puente V, Munteis E. Previous antiplatelet therapy is an independent predictor of 30-day mortality after spontaneous supratentorial intracerebral hemorrhage. *Journal of Neurology*. 2005;252:412-416.
- e13. Sia SF, Tan KS, Waran V. Primary intracerebral haemorrhage in Malaysia: in-hospital mortality and outcome in patients from a hospital based registry. *Medical Journal of Malaysia*. 2007;62:308-312.
- e14. Stead LG, Jain A, Bellolio MF, Odufuye A, Gilmore RM, Rabinstein A, et al. Emergency Department hyperglycemia as a predictor of early mortality and worse functional outcome after intracerebral hemorrhage. *Neurocritical Care*. 2010;13:67-74.
- e15. Tapia-Perez JH, Gehring S, Zilke R, Schneider T. Effect of increased glucose levels on short-term outcome in hypertensive spontaneous intracerebral hemorrhage. *Clinical Neurology & Neurosurgery*. 2014;118:37-43.
- e16. Togha M, Bakhtavar K. Factors associated with in-hospital mortality following intracerebral hemorrhage: a three-year study in Tehran, Iran. *BMC Neurology*. 2004;4:9.
- e17. Yousuf RM, Fauzi ARM, Jamalludin AR, How SH, Amran M, Shahrin TCA, et al. Predictors in-hospital mortality in primary intracerebral haemorrhage in East coast of Peninsular Malaysia. *Neurology Asia*. 2012;17:93-99.

- e18. Zia E, Engstrom G, Svensson PJ, Norrving B, Pessah-Rasmussen H. Three-year survival and stroke recurrence rates in patients with primary intracerebral hemorrhage. *Stroke.* 2009;40:3567-3573.
- e19. Tetri S, Mantymaki L, Juvela S, Saloheimo P, Pyhtinen J, Rusanen H, et al. Impact of ischemic heart disease and atrial fibrillation on survival after spontaneous intracerebral hemorrhage. *J Neurosurg.* 2008;108:1172-1177.
- e20. Rosand J, Eckman MH, Knudsen KA, Singer DE, Greenberg SM. The Effect of Warfarin and Intensity of Anticoagulation on Outcome of Intracerebral Hemorrhage. *Archives of Internal Medicine.* 2004;164:880-884.
- e21. Pan YS, Jing J, Wang YL, Zhao XQ, Song B, Wang WJ, et al. Use of statin during hospitalization improves the outcome after intracerebral hemorrhage. *CNS Neuroscience and Therapeutics.* 2014;20:548-555.
- e22. Hansen BM, Nilsson OG, Anderson H, Norrving B, Saveland H, Lindgren A. Long term (13 years) prognosis after primary intracerebral haemorrhage: a prospective population based study of long term mortality, prognostic factors and causes of death. *Journal of Neurology, Neurosurgery & Psychiatry.* 2013;84:1150-1155.
- e23. Jover-Saenz A, Porcel-Perez JM, Vives-Soto M, Rubio-Caballero M. Epidemiology of acute cerebrovascular disease in Lleida, from 1996 to 1997. Predictive factors of death at short and medium term. *Revista de Neurologia.* 1999;28:941-948.
- e24. Passero S, Ciacci G, Olivelli M. The influence of diabetes and hyperglycemia on clinical course after intracerebral hemorrhage. *Neurology.* 2003;61:1351-1356.
- e25. Sacco S, Marini C, Toni D, Olivieri L, Carolei A. Incidence and 10-year survival of intracerebral hemorrhage in a population-based registry. *Stroke.* 2009;40:394-399.
- e26. Wong KS. Risk factors for early death in acute ischemic stroke and intracerebral hemorrhage: A prospective hospital-based study in Asia. Asian Acute Stroke Advisory Panel. *Stroke.* 1999;30:2326-2330.
- e27. Almutawa E, Shahda A, Albalooshi M. Spontaneous intracerebral haemorrhage(SICH): Factors associated with in-hospital mortality. *Bahrain Medical Bulletin.* 2012;34.
- e28. Icks A, Glaeske G, Claessen H, Hoffmann F, Morbach S. Time-dependent impact of diabetes on mortality in patients with stroke: Survival up to 5 years in a health insurance population cohort in Germany. *Diabetes Care.* 2012;35:1868-1875.
- e29. Sun Y, Toh MP. Impact of diabetes mellitus (DM) on the health-care utilization and clinical outcomes of patients with stroke in Singapore. *Value in Health.* 2009;12 Suppl 3:S101-105.
- e30. Kiers L, Davis SM, Larkins R, Hopper J, Tress B, Rossiter SC, et al. Stroke topography and outcome in relation to hyperglycaemia and diabetes. *Journal of Neurology, Neurosurgery & Psychiatry.* 1992;55:263-270.
- e31. Liu J, Grundy SM, Smith Jr SC, Lena Vega G, Wu Z, Zeng Z, et al. Ten-year risk of cardiovascular incidence related to diabetes, prediabetes, and the metabolic syndrome. *American Heart Journal.* 2007;153:552-558.
- e32. Abbott RD, Donahue RP, MacMahon SW, Reed DM, Yano K. Diabetes and the risk of stroke. The Honolulu Heart Program. *JAMA.* 1987;257:949-952.
- e33. Chen HF, Lee SP, Li CY. Sex differences in the incidence of hemorrhagic and ischemic stroke among diabetics in Taiwan. *Journal of Women's Health.* 2009;18:647-654.
- e34. Secrest AM, Prince CT, Costacou T, Miller RG, Orchard TJ. Predictors of and survival after incident stroke in type 1 diabetes. *Diabetes & Vascular Disease Research.* 2013;10:3-10.
- e35. Balan D, Babes PA. Incidence and type of stroke in patients with diabetes. Comparison between diabetics and nondiabetics. *Romanian Journal of Internal Medicine.* 2009;47:249-255.

- e36. Jorgensen H, Nakayama H, Raaschou HO, Olsen TS. Stroke in patients with diabetes. The Copenhagen Stroke Study. *Stroke*. 1994;25:1977-1984.
- e37. Karapanayiotides T, Piechowski-Jozwiak B, van Melle G, Bogousslavsky J, Devuyst G. Stroke patterns, etiology, and prognosis in patients with diabetes mellitus. *Neurology*. 2004;62:1558-1562.
- e38. Silvestrelli G, Lanari A, Cardaioli G, Saggese E, DeAngelis M, Capocchi G, et al. Diabetes mellitus and stroke subtypes. *Giornale Italiano di Diabetologia e Metabolismo*. 2005;25:59-65.
- e39. Woo J, Lam CW, Kay R, Wong AH, Teoh R, Nicholls MG. The influence of hyperglycemia and diabetes mellitus on immediate and 3-month morbidity and mortality after acute stroke. *Archives of Neurology*. 1990;47:1174-1177.
- e40. Hagg S, Thorn LM, Forsblom CM, Gordin D, Saraheimo M, Tolonen N, et al. Different risk factor profiles for ischemic and hemorrhagic stroke in type 1 diabetes mellitus. *Stroke*. 2014;45:2558-2562.
- e41. Hagg S, Thorn LM, Putala J, Liebkind R, Harjutsalo V, Forsblom CM, et al. Incidence of stroke according to presence of diabetic nephropathy and severe diabetic retinopathy in patients with type 1 diabetes. *Diabetes Care*. 2013;36:4140-4146.
- e42. Hankey GJ, Anderson NE, Ting RD, Veillard AS, Romo M, Wosik M, et al. Rates and predictors of risk of stroke and its subtypes in diabetes: A prospective observational study. *Journal of Neurology, Neurosurgery and Psychiatry*. 2013;84:281-287.
- e43. Herzig R, Vlachova I, Mares J, Gabrys M, Sanak D, Skoloudik D, et al. Occurrence of diabetes mellitus in spontaneous intracerebral hemorrhage. *Acta Diabetologica*. 2007;44:201-207.
- e44. Newman EJ, Rahman FS, Lees KR, Weir CJ, Walters MR. Elevated serum urate concentration independently predicts poor outcome following stroke in patients with diabetes. *Diabetes/Metabolism Research Reviews*. 2006;22:79-82.